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MINERAL INFORMATION SERVICE is designed to inform the public on the geology and mineral resources of California and on the usefulness of minerals and rocks, and to serve as a news release on mineral discoveries, mining operations, markets, statistics, and new publications. It is issued monthly by the California State Division of Mines. Subscription price, January through December, is \$1.00.

ELEMENTARY PLACER MINING METHODS

Introduction

Commercial gold mining in California touched a new post-war low during 1956, owing to rising operating costs and the fixed price for gold, but the public interest in placer mining continues unabated. Each day the Division receives letters of inquiry from students, week-end prospectors, vacationists, tourists and retired hobbyists, desiring to follow the footsteps of the argonauts and seeking guideposts along the way.

The fortyminers prospected and mined very efficiently throughout the state. They were followed by the Chinese miners whose thoroughness in mining has become a byword, and by many generations of prospectors during the succeeding hundred years. Thus it must be remembered that few, if any, virgin placers exist in California today. Most gold along rivers and streams within easy reach is new gold washed down from the hills each winter or gold lost from earlier operations.

Nevertheless a hard-working prospector willing to toil long hours can still recover from 50 cents to a dollar a day in gold, or about \$100 a season. Anyone hoping to find unworked ground where greater rewards may be won must be prepared to prospect the rougher backwoods country and side streams far removed from our modern highways. Very little inducement is offered the amateur lacking in funds to prospect for gold in the hope of thereby making a living.

Land Open to Placering

Although permission of the owner is required to prospect on private property, no such permission is required to prospect on unreserved vacant public land of the United States. Information on land ownership can be obtained from the plat maps in the offices of the county assessors. Unfortunately, these maps do not distinguish between parts of the public lands open to prospecting and parts that already have been claimed. Since surveys of claimed lands are not required until the property passes to patent or private ownership, their exact location may be unknown. The safest procedure, therefore, for week-end prospectors and vacationists is to obtain permission from the residents on the property they wish to pan or prospect.

The more experienced and professional prospectors usually have time to examine also the records of unpatented mining claims in the offices of the county recorder, and the records of patented mining claims in the offices of the U.S. Bureau of Land Management, Sacramento or Los Angeles. Public land thus determined to be open can be prospected and when a mineral discovery is made, the land can be located as explained in the Division's Legal Guide for California Prospectors and Miners (25¢).

Placer Mining Areas

The most productive gold mining area of the state is located along the west slope of the Sierra Nevada. Areas favorable to placer mining extend upstream along the Sierran streams from the points where they enter the Great Valley of California to elevations of about 5000 feet. The middle fork of the American River and branches of the Feather River in Plumas County have been mined successfully almost to their sources. Eastward, the granite area which forms the core and crest of the range is generally unfavorable.

Another important placer mining area is located in the Klamath Mountains in the northern part of the state. The relative inaccessibility and sparseness of population render this area attractive to the more venturesome prospectors. The Smith, Klamath, Scott, Salmon, Trinity, New, Hayfork, and Sacramento Rivers and their tributaries have been especially productive.

In southern California, gold has been recovered from placers along the Kern River; in the vicinity of Randsburg and Atolia; Placerita Canyon near Newhall, and the San Gabriel Canyon in Los Angeles County, as well as many other localities.

Types of Placers

Although buried-river placers are found in California the amateur prospector will be interested primarily in surface placers. These may be separated into residual placers and transported placers.

When quartz or other gold-bearing rock is broken down by disintegration or chemical alteration, some of the lightweight rock fragments may be removed, leaving the heavier gold concentrated as a residual placer. Transported placers are formed when both